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Education:

M.E.M.	Master of Engineering Management Project: Intrapreneuring in Large Service Organizations The George Washington University, Washington, DC 20052
Ph.D.	Doctor of Philosophy in Engineering Science & Mechanics Dissertation Topic: Seismic Isolation Using Friction Damping Virginia Tech, Blacksburg, VA 24061
M.S.	Master of Science in Engineering Science & Mechanics Thesis Topic: Vibration of Bilinear Hysteretic Oscillators Virginia Tech, Blacksburg, VA 24061
M.S.	Master of Science in Civil Engineering Thesis Topic: Site-Dependent Ground Response Spectra Virginia Tech, Blacksburg, VA 24061
B.E. (Hons)	Bachelor of Civil Engineering Project: CPM Construction Planning for a Housing Colony The University of Bombay, India

Registrations:

- Chartered Engineer, UK
- Licensed Structural Engineer, Illinois
- Registered Professional Engineer (Civil), Maryland and California
- Registered Professional Engineer (Mechanical), Virginia and California
- ASME Section III certified "Registered Professional Engineer"
- In the process of becoming a Registered Professional Engineer (Electrical)

Memberships:

- Member, Bechtel Seismic Committee
- Member, Honor Society of Phi Kappa Phi
- Fellow, Institution of Civil Engineers (ICE), UK
- Fellow, American Society of Civil Engineers (ASCE)
- Member, American Management Association (AMA)
- Member, American Institute of Steel Construction (AISC)
- Member, American Society of Mechanical Engineers (ASME)
- Member, Institute of Electrical and Electronic Engineers (IEEE)

Professional Activities:

- **ASCE Technical Committees** – Stability, Shock & Vibratory Effects, Dynamics, Seismic Effects (involved in preparation of ASCE's primer on Seismic Isolation)
- **ASCE Standard Committees** – Minimum Design Loads for Buildings and Other Structures (Main Voting Committee); Seismic Loads Task Committee; General Structural Provisions Task Committee, Strength Task Committee
- **ASCE Administrative Committees** – Structures Congress Oversight, 2001 Structures Congress Steering Committee, invited to organize SMiRT conference
- **FEMA/BSSC** – National Earthquake Hazard Reduction Program (NEHRP) Task Committee for Nonbuilding Structures
- **AISC Committees** - Seismic Design Standard, Nonbuilding Structures
- **Reviewer** – AISC Engineering Journal, ASCE Journal of Structural Engineering, and ASCE Journal of Engineering Mechanics
- **Organizer/Chair** – Technical sessions at ASCE's Structures and Engineering Mechanics conferences; Structures Track Chair, 2004 ASCE Annual Convention

- **Associate Editor** – ASCE Journal of Structural Engineering
- **Panelist** – NSF Review Panel for research program in Hazards Mitigation, NIST
  peer-review panel for Seismic Safety in Design/Construction of Power Facilities
- **Advisor** – nominated to the seismic advisory panel for the Government of India

Summary of Skills:

- Research/Teaching experience in Earthquake Structural Engineering, Structural Dynamics, Structural Reliability, Building Codes, and Advanced Steel Design
- Consulting experience in Finite Element Analysis, Structural Impact, Analysis for
  Seismic/Wind loads, Building Codes, Turbo-machinery foundation, and Buckling
- Design and management experience in power plant structures/systems (fossil and nuclear) and commercial buildings, rigging/load handling structures and equipment
- Proficient in Microsoft Office products, Mathcad, Visio, FORTRAN, ANSYS, LS-Dyna, SAP, STAAD, GTSTRUDL, and Primavera (project planning)
- Broad training/experience in Civil/Structural Engineering, Applied Mechanics, Systems Engineering, and Technical Management
- Extensive network in building, power, and other nonbuilding industries; codes/ standards communities; and academia (US domestic and some international)

Work Experience:

- ***Since January '99*** Adjunct Faculty (part-time), Graduate Structural Engineering Program, Civil Engineering Department, The Johns Hopkins University, Baltimore, MD

  Courses/Duties

  - Advanced Steel Design
  - Design of Structures for Lateral and Gravity Loads (developed as a new course)
  - Structural Dynamics (also invited to teach Prestressed Concrete Design)
  - Present/organize seminars, course/career advising to graduate students
  - Participate in focus groups on student enrollment, curriculum restructuring

- ***Since August '89*** Acting Assistant Chief Civil Engineer, Senior Engineering Specialist, Engineering Supervisor, Acting Assistant Project Engineer, Bechtel Power Corporation, MD

  Projects

  Engineering Management Staff
  Central Engineering Specialist Staff
  Early Site Permitting for Next Generation Nuclear Plants
  Fossil (Coal/Gas fired) Power Plants (Domestic and International)
  Operating Nuclear Plant Service Projects
  Nuclear Steam Generator Replacement Projects (Domestic and International)
  Nuclear Reactor Pressure Vessel Head Replacement Projects (Domestic)
  Resident Engineer, Steam Generator/Reactor Head Replacement Projects

  Specialized Tasks The following assignments involved the use of expertise in structural impact, structural dynamics, buckling, seismic analysis, finite element analysis, building codes, etc. Some of the following activities were performed in supervisory role. Many tasks involved some original work, use of state-of-the-art literature, and/or collaboration with outside experts. Some of the tasks were forensic in nature, requiring expert advice to upper management/clients.

  - Study/comparison of domestic/international building codes to evaluate project seismic design requirements
  - Design/analysis of removable wall panels and its connections for loads due to missile impacts, earthquake, compartment pressurization, etc.
  - Evaluation of prestressed containment structure with a construction opening
  - Evaluation of steel vessel for postulated impact due to a vessel drop
  - Evaluation of buried utilities for effects of impact due to dropped objects

- Design of impact-resistant frame for on-site transport of steam generators
- Progressive failure evaluation and protection of temporary structures (load handling platforms) and gantry cranes for extreme events such as tornado
- Determination of ultimate capacity of a concrete compartment subjected to internal blast loading
- Seismic design/analysis/qualification of structures, cranes, and equipment
- Buckling evaluation of spherical steel liner plate subjected to the action of a hydraulic hammer (for concrete chipping on a containment structure dome)
- Stability evaluation of gantry cranes and fixed pedestal hydraulic cranes
- Finite element analysis of a reinforced concrete containment structure with two construction openings in its dome
- Design of a sampling program for testing of rebars to achieve a specified confidence level for a given acceptable defect rate
- Seismic risk evaluations for nuclear power plant sites (including potential sites for early site permitting of next-generation nuclear power plants)
- Determination of design wind loading criteria for application to interim structural configurations during construction
- Evaluation/retrofit of turbo-machinery foundation for stiffness/vibration
- Evaluation of roofing design for code compliance and workmanship (as part of investigation of roofing failure under high wind loads)
- Evaluation of concrete mix design and qualification/in-process testing results
- Verification/validation of structural engineering software
- Inspection of deficient structural steel for acceptability/repair requirements
- Independent review/analysis of pipe support failure due to water hammer loads
- Evaluation/retrofit of piperack structure after damage due to steam hammer
- Independent review of energy absorbing platform design for a cask impact
- Soil-structure interaction and retrofit anchor strap design for tank foundations
- Evaluation of a steel Nuclear Containment Stucture with a construction opening
- Advisory role on purchase/use of high-end analysis softwares such as ANSYS, LS-Dyna, and CivilFEM
- Development/revision of code/standard provisions (in areas of seismic loads, seismic design, structural occupancy categories, etc)
- Advise projects about requirements of ASME B&PVC Code Sections III and XI pertaining to repair/testing of steel/concrete nuclear containment structures
- Present or arrange targeted training/seminars (by in-house/outside experts) for discipline engineers, as well as for technical specialists from various disciplines

Management & Design Tasks

During Jan-Feb 2000, as the Acting Assistant Chief Civil Engineer for a group of approximately 200 engineers, architects, specialists, and draftsmen, performed duties such as project staffing; hiring; employee ranking; salary administration; staff review of critical design deliverables; training and development; review of best practices; technical consultation/oversight; etc.

During Jan-March 2002, as Engineering Coordinator/Assistant Project Engineer for La Rosita Combined Cycle Project, supervised multi-discipline work to help ensure timely completion of engineering and construction activities associated with field erected tanks. Also, conducted project weekly progress reviews, drawing reviews/approval, etc, to assist the Project Engineering Manager

(supervising a group of 50 engineers). During April-Oct 2002, provided support as an acting Project Engineer on Davis Besse Reactor Head Replacement Project (the first of its kind in the US) to assist in day-to-day technical operations.

As a supervisor/lead engineer for fossil/nuclear power projects, duties included: proposal development (quantity and engineering hour estimates); conceptual designs/layouts; field trips; interface with client, construction team, and building officials; resource and schedule planning; monitoring of budgets and schedules; preparation/review/approval of calculations, drawings, periodic progress reports, specifications, and contracts; presentations for internal and external reviews; inter-disciplinary coordination; review of vendor documents; managing outside consultants; critical support during plant startup phase, coaching and reviews of direct reports; and training and mentoring of discipline engineers.

Directly supervised groups of up to twenty engineers, specialists, and draftsmen for power projects worth up to $500M (with civil engineering budgets up to 40,000 hours). On some projects, the reporting team consisted of groups operating from remote/overseas offices. Typical/major design/analysis tasks are listed below (designs involved use of codes such as ASCE 7, UBC, AISC, ACI, AISI, API, IBC, AWWA, ANSI rigging standards, and ASME (B&PVC Code Sections II, III, and XI), NUREGs, Nuclear Regulatory Guides, as well as some international codes/standards for steel, concrete, and masonry structures):

- Turbine-generator Pedestal structures for steam and gas turbines
- 400 ft tall flue gas stack, including its foundation
- Shell design and foundation design for large storage tanks
- Grade slabs/mat foundations for fossil power plant equipment
- Piles/caissons for tower structures
- Waste water storage sumps/basins (designed per ACI 350)
- Stiffeners for spherical/cylindrical shell (design per ASME and SSRC methods)
- Precast panels and their joints for replacement of existing shield walls
- Structural steel framing for piperacks, buildings, floor framings/platforms, and acoustical enclosures
- Concrete slabs, beams, and columns
- Heavy-duty construction cart/runway beams for hauling of equipment and debris
- Reinforced masonry fire-walls, and concrete pedestal/pit for transformers
- Base anchorages, spread footings, grade beams, etc. for building columns
- Foundations for 500-Ton gantry crane and load handling platform with runway beams; anchorages for fixed pedestal cranes
- Pipe supports and anchors for large process pipes; stress analysis of nozzles
- Rigging components (spreader beams, lifting trunnions, yokes, construction trolley, guy wiring, lugs, towing assembly, etc); including input to the design of rigging system for supporting Steam Generator Replacement Projects
- Scheduling and resource planning (using Primavera) for major tasks/projects
- Support to geotechnical engineers for piling and ground improvement contracts
- Independent review of design of gantry cranes, runway platforms
- Specifications/contracts for earthwork, tanks, bridge, buildings, circulating water piping, concrete/rebar supply/placement, steel fabrication/erection, hydro-demolition, post-tensioning tendon work, etc
- Documentation for nuclear plant modifications under 10CFR50.59 program

- Resident Engineer, North Anna Nuclear Steam Generator Replacement Project
- Resident Engineer, Davis Besse Reactor Vessel Head Replacement Project

Other Activities

- Member, Corporate Committee for Understanding and Applying Technology (1998 to 2000)
- Reviewer, Bechtel Information Program to select best Bechtel-authored papers
- Member, Bechtel's corporate level Seismic Committee (since April 2003)
- Member, Technical Specialist Steering Committee (March 2002 – March 2003)
- Member/Co-Facilitator, Pride in the Work Place Team (1990-1994)
- Member, Corporate Rewards & Recognition Focus Group (1993-1994)
- Participant, "2001 Leadership" Implementation Panel, Bechtel Management Advisory Seminar (1993)
- Participant and CI Coach, Technical Advisory Forum (1996, 1997, 2000)
- Member, Continuous Improvement (CI) Lead Team, Perryman Project
- Charter Member, National Management Association's Gaithersburg Chapter

Training

- Zenger-Miller's "Working" (1990)
- Comprehensive Fundamental of Engineering (EIT) Review Course (1990)
- Frontline Leadership (1991)
- Team Facilitator Training (1993)
- Comprehensive Civil Engineering PE Review Course (1993)
- Continuous Improvement (Total Quality Management) Coach (1994)
- Nuclear Power Technology (1994)
- ANSYS-Structural/Mechanical (1998)
- Franklin-Covey Time Management (1999)
- Engineering Leadership (2000)
- Comprehensive Mechanical Engineering PE Review Course (2000)
- Seven Habits of Highly Effective Leaders (2001)
- Comprehensive Electrical Engineering PE Review Course (2002)
- ASME Section III Certification Training (2002)
- ANSYS-LS/Dyna (2002)
- Six Sigma Yellow Belt (2003)
- Numerous inhouse technical training courses (CADD, Fracture Mechanics, etc)
- Self-study in structural impact, timber/masonry design, prestressed design, etc

Awards

- Corporate Special Performance Award (1992)
- Special Performance Citation, Calvert Cliffs Project (1993)
- Special Performance Citation, North Anna SGR Project (1994)
- Plaque for Outstanding Leadership of Pride In the Work Place Team (1994)
- Citation for Contributions to Recycling & Respect for Others committees (1993)
- Reward for Continuous Improvement (RFCI), 1995
- Construction Team Recognition Award (North Anna), 1996

- Special Performance Recognition, La Rosita Project, 2001
- Elected Fellow of ASCE in 2001 after nomination by the President of Structural Engineering Institute, and with waiver of the rule to be full member for 10+years
- Elected Fellow and Chartered Engineer in 2002 by Institution of Civil Engineers in UK via direct entry (with waiver of the rules for membership in lower grades)
- BIP (Bechtel Information Program) Award for authoring conference papers and organizing/chairing technical sessions (2000, 2001, 2002)
- Identified as a potential Bechtel Fellow (2003)

- ***2/89-8/89*** Post Doctoral Research Scientist
  Department of Engineering Science & Mechanics
  Virginia Tech, Blacksburg, VA 24061

  Research Projects Seismic Isolation Using Resilient Friction Damping, Generation of Simulated Time Histories Using ARMA Method for Vehicle Fatigue Characterization

  Duties
  - Assist in the preparation of research proposals
  - Conduct funded research,
  - Develop FORTRAN codes for solving the necessary solutions
  - Lecture (part-time) a post-graduate class on Random Vibrations
  - Author journal/conference papers and research reports

- ***9/82-12/88*** Graduate Student, Tutor, Research/Teaching Assistant, Research Associate
  Departments of Engineering Science & Mechanics and Civil Engineering,
  Virginia Tech, Blacksburg, VA 24061

  Research Projects Seismic Response of Hysteretic Structures, Grouping of Ground Response Spectra using Site Characteristics, Seismic Isolation using Friction Damping, Pressure and Flow Computation using a Modified Vortex Lattice Method

  Duties
  - Completed coursework for two Master's and Doctoral degrees
  - Worked on many funded research projects to fulfill the thesis/dissertation requirements for two Master's and a Doctoral degree
  - Worked on consulting projects in the field of computational fluid mechanics
  - Developed FORTRAN codes for solving the necessary solutions
  - Graded several post-graduate and undergraduate level courses
  - Served as a substitute instructor and tutor for some undergraduate courses
  - Provided guidance to final-year students for their capstone projects
  - Helped Dean's office prepare a database for comparing academic standings of engineering colleges/departments at major US universities
  - Prepared research reports and journal papers, presented conference papers

  Awards
  - Nominated as the department's top candidate for Cunningham Fellowship, 1984
  - Partial Tuition Waiver Scholarship (1983-1988)

- ***8/81-8/82*** Engineer, M. N. Dastur & Company (Private) Limited, Bombay, India

  Duties
  - Design of concrete slabs, beams, columns, roof arches
  - Design of steel trusses, beams and columns
  - Design of concrete silo (including ring beam and wall)
  - Site surveying and field walkdowns

- Quantity take-off for steel and concrete;
- Development of BASIC programs for design/ analysis of beams and columns
- Design per Indian Codes; sometimes compared with British Codes

- ***Summer 79, 80*** Trainee Engineer, SHKOMIN Workshop and Foundry, Bombay, India
  Duties
  - Worked on turning (lathe), milling, and drilling machines
  - Studied customer drawings and contacted clients for clarifications, if necessary
  - Planned out jobs for making machine parts and worked with/supervised craft

Advanced Level Technical/Professional Courses

- Advanced Concrete Design
- Plastic Design of Steel Structures
- Dynamics of Structures
- Random Vibrations
- Viscoelasticity
- Probabilistic Mechanics
- Structural Reliability
- Vibrations of Continuous Media
- Theory of Finite Element Method
- Mechanics of Composite Materials
- Advanced Foundation Design
- Bridge Design
- Structural Stability
- Matrix Methods of Structural Analysis
- Theory of Plates & Shells
- Advanced Mechanics of Materials
- Finite Element Analysis of Structures
- Earthquake Engineering & Seismic Risk Analysis
- Computer Aided Design of Structures
- Continuum Mechanics
- Incompressible Fluid Mechanics
- Analytical Dynamics
- Variational Methods in Engineering
- Numerical Methods
- Nonlinear Finite Element Analysis
- Earthquake Mitigation Design

Advanced/Professional Level Management Courses

- Systems Engineering Management
- Business/Contract Law
- Financial Analysis and Managerial Accounting
- General Management of Technical Organizations
- Engineering Economics
- Advanced Engineering Economics for Major Public Projects (including capital budgeting)
- Management of Information Systems & Technology
- Contracts Management
- Elements of Decision Making
- Project & Program Management

- Quantitative Methods in Management
- Organizational Behavior
- Problem Solving in Engineering Management
- Performance Based Leadership
- Six-Sigma

Seminars and Publications

Two journal articles, nine conference papers, four research reports, and two seminars (in the fields of seismic isolation, finite element analysis, structural dynamics, structural impact, repair/analysis of nuclear structures, and development/application of structural load/design codes); list available upon request

References

References from contacts/associates in industry, academia, and code/standard community – available upon request

Personal

US Citizen
Spouse: Phyllis Malushte
Children: Samantha Malushte (7 years old)

Hobbies/Interests

Well-rounded, outgoing personality with varied interests in life and learning; main hobbies are:

- Cooking
- Reading (especially about current affairs, world cultures, history, geography, and technology)
- Traveling (domestic and international)
- Learning languages (working knowledge of Spanish)
- Socializing, meeting new people